

REMARKS/ARGUMENTS

Claims 1-11, 14-19 and 22-26 are present in this application. By this Amendment, claim 10 has been amended. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

Entry of this Amendment is proper under 37 C.F.R. §1.116 since the Amendment: (a) places the application in condition for allowance (for the reasons discussed herein); (b) does not raise any new issue requiring further search and/or consideration (since the amendments amplify issues previously discussed throughout prosecution and raised by the Examiner in the previous Office Action); (c) satisfies a requirement of form asserted in the Office Action; (d) does not present any additional claims without canceling a corresponding number of finally-rejected claims; and (e) places the application in better form for appeal, should an appeal be necessary. The Amendment is necessary and was not earlier presented because it is made in response to arguments raised in the Final Rejection. Entry of the Amendment is thus respectfully requested.

With regard to the objection to claim 10, claim 10 has been amended as suggested by the Examiner. Withdrawal of the objection is requested.

Claims 10, 22, 24 and 25 were rejected under 35 U.S.C. §103(a) over U.S. Published Patent Application No. 2003/0181302 to Kaiser et al. in view of U.S. Patent No. 5,763,345 to Ohshima et al. This rejection is respectfully traversed.

As discussed previously, the defined clay has a specific particle diameter distribution (in which 70% by weight or more of the particles have a particle size of 5 μm or smaller). Such clay having a narrow particle diameter distribution provides a greater binding effect and is excellent in wear resistance. The effect cannot be sufficiently obtained, however, unless the clay is used in a given amount or higher. With reference to the comparative examples described in the

specification, it has been determined that the lower limit of the amount of the specific clay for attaining practically favorable surface hardness and wear resistance is 20% by weight. As noted, in addition, when the clay amount is from 30 to 40% by weight, further superior results are obtained as shown with reference to Examples 4B and 5B.

With regard to the upper limit, as also discussed previously, in Example 6B, elutriated clay was used in an amount larger than the claimed range (50% by weight versus 20-40% by weight), and scratches were caused on glass. Even if elutriation treatment is carried out, impurities cannot be removed completely. Therefore, when elutriated clay is used in an excess amount, an effect of the impurities develops. According to the claimed invention, the amount of the specific clay is limited (i.e., 40% by weight at the most), which thereby prevents damages to the plate glass while maintaining good wear resistance.

In contrast, the Kaiser publication references a heat resistant binder (clay) content of 40-50% by weight. Applicants acknowledge that an abutting range (i.e., the lower limit 40% in Kaiser) in the prior art establishes a *prima facie* case of obviousness. It is well settled, however, that an applicant may overcome a *prima facie* case of obviousness by establishing “that the [claimed] range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.” *In re Geisler*, 116 F.3d at 1469-70, 43 USPQ2d at 1365 (alteration in original) (quoting *In re Woodruff*, 919 F.2d at 1578, 16 USPQ2d at 1936). See also, *In re Wertheim*, 541 F.2d 257, 267, 191 USPQ 90, 100 (CCPA 1976) (recognizing that “ranges which overlap or lie inside ranges disclosed by the prior art may be patentable if the applicant can show criticality in the claimed range by evidence of unexpected results”). Moreover, the applicant’s showing of unexpected results must be commensurate in scope with the claimed range. *In re Peterson*, 315 F.3d 1325, 65 USPQ2d 1379, 1383 (Fed. Cir. 2003). See

also, *In re Soni*, 54 F.3d 746, 750, 34 USPQ2d 1684, 1687 (Fed. Cir. 1995) ("One way for a patent applicant to rebut a prima facie case of obviousness is to make a showing of 'unexpected results,' i.e., to show that the claimed invention exhibits some superior property or advantage that a person of ordinary skill in the relevant art would have found surprising or unexpected.").

When an applicant seeks to overcome a prima facie case of obviousness by showing improved performance in a range that is within or overlaps with a range disclosed in the prior art, the applicant must "show that the [claimed] range is *critical*, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

With reference to the comments above and previous comments, Applicants respectfully submit that the defined maximum amount of specific clay at 40% by weight is a critical parameter that prevents damage to the plate glass while maintaining good wear resistance. Larger amounts as evidenced in Example 6B could result in scratches or other damage to the glass. The result amounts to a superior property and advantage that a person of ordinary skill in the art would have found surprising or unexpected. As such, Applicants submit that Kaiser and Ohshima fall short of the claimed invention, and Applicants submit that the rejection of claim 10 is misplaced.

In the "Response to Arguments" section of the Office Action, the Examiner acknowledges that the claimed ranges are critical. The Examiner refers, however, to the disclosure of numerous sections of the specification "that there is a wide range for each claimed 'content range' within which the invention would still perform equally well." It is clear from the description of the examples and the comments above, however, that the use of materials outside the claimed ranges in fact would not perform "equally well." For example, as noted with regard

to Example 6B, merely changing the clay content to 50% increased the plate glass susceptibility to damage and wear resistance. Applicants thus respectfully disagree with the conclusion that those of ordinary skill in the art would have found the critical ranges to be obvious matters of design choice.

With regard to dependent claims 22, 24 and 25, Applicants submit that these claims are allowable at least by virtue of their dependency on an allowable independent claim. Moreover, with regard to claims 24 and 25, it is not mathematically impossible in Ohshima to have clay content of particles with a particle size of 5 μm or larger in an amount of 15% (claim 24) or 10% (claim 25) by weight based on the weight of the clay. The Ohshima patent is silent with regard to such clay content, and for this reason also, Applicants submit that the rejection of claims 24 and 25 is misplaced.

Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 11 and 26 were rejected under 35 U.S.C. §103(a) over Kaiser in view of Ohshima and U.S. Patent No. 4,533,581 to Asaumi et al. The Asaumi patent, however, does not correct the deficiencies noted above with regard to Kaiser and Ohshima, taken singly or in combination. As such, Applicants submit that these dependent claims are allowable at least by virtue of their dependency on an allowable independent claim. Withdrawal of the rejection is requested.

Claim 23 was rejected under 35 U.S.C. §103(a) over Kaiser in view of Ohshima and U.S. Patent No. 4,533,968 to Yoshida et al. The Yoshida patent, however, does not correct the deficiencies noted above with regard to Kaiser and Ohshima. As such, Applicants submit that this dependent claim is allowable at least by virtue of their dependency on an allowable independent claim. Withdrawal of the rejection is requested.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the claims are patentable over the art of record and that the application is in condition for allowance. Should the Examiner believe that anything further is desirable in order to place the application in condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Prompt passage to issuance is earnestly solicited.

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to Deposit Account No. 14-1140.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: /Alan M. Kagen/
Alan M. Kagen
Reg. No. 36,178

AMK:jls
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100